South Star Cogeneration LLC is seeking approval from the CEC to construct and operate the South Star Cogeneration Project (South Star) in western Kern County approximately 35 miles southwest of Bakersfield, California. The South Star Project will consist of two substantially identical cogeneration plants, South Star I (Section 17, T32S, R23E) and South Star II (Section 7, T32S, R23E), that are located approximately 1.5 miles apart on contiguous Texaco California Inc. (TCI) property in the South Midway-Sunset Oilfield. The Application for Certification (AFC) presents an evaluation of the entire South Star Project in a manner to clearly indicate the environmental affects associated with each site and its related linear facilities.

South Star I includes the following project components shown on Figure 2-1:

- South Star I site;
- Replacement of poles and conductor for approximately 4.7 miles of existing 12.47 kV transmission line;
- 0.6 mile 115 kV transmission line extension to South Star I site;
- Alternative stand-alone 5.3 mile 115 kV transmission line;
- 3.6 miles of natural gas line (Kern-Mojave to Station 109 and natural gas line placed within TCI South Midway Utility Corridor Segment A);
- Approximately 2.4 mile Alternative Route 1 natural gas line; and
- Improved access road (Midoil Road to South Star I site).

South Star II includes the following project components as shown on Figure 2-1:

- South Star II site;
- 3.8 mile addition of second 115 kV circuit on proposed South Star I transmission line;
- 1.4 miles of natural gas line (placed within TCI South Midway Utility Corridor Segment B);
- Alternative aboveground Route 2 natural gas line; and
- Improved access road (Midoil Road to South Star II site).

Cultural resources include archaeological and historical objects, sites and districts, historic buildings and structures, cultural landscapes, and sites and resources of concern to local Native Americans and other ethnic or special interest groups.

The purpose of this cultural resources study is to inventory and tentatively assess the significance of cultural resources that the proposed project could potentially affect. Included in this report are archaeological site descriptions and records of correspondence with local Native Americans. These records, including site locational data, are included in the confidential South Star Project Cultural Resources Technical Report (Appendix D). This technical report is confidential and is available to qualified cultural resource specialists and, on a need-to-know basis, to project managers. All other information contained in Appendix D is provided herein.

As part of the field inventory, archaeological field investigations were undertaken to assess the presence/absence and/or the extent of specific sites and features. All cultural resources work for this project was carried out under the direct supervision of an archaeologist who meets the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (National Park Service, 1983 [36 CFR Part 61]), and is consistent with the procedures for compliance with Section 106 of the National Historic Preservation Act (NHPA), set forth at 36 CFR 800.

Detailed below are descriptions of project components; baseline conditions for prehistory, history and ethnography; results of coordination with the Native American community; records searches; field surveys and assessments of potential impacts (direct and indirect) on cultural resources on a component-by-component basis. Note that in the following text the term "Project Area" refers to the project footprint plus an area of 200-feet to 225-foot radius on each side of each project component (as detailed below). "Study area" refers to the project footprint, plus an area of 1/4-mile radius around each component. This "study area" provides cultural setting, while "project area" applies to assessment of the project itself.

Ten previously unrecorded cultural resource sites were recorded within the project study area during the survey for the South Star I and II Cogeneration Project. In addition, seven previously unrecorded cultural resource sites were recorded within the footprint of linear components that were determined to be outside the scope of the project due to project refinement subsequent to the archaeological survey. It is anticipated that all of the recorded resources within the project footprint can be avoided through design refinement and

constriction of the construction rights of way (ROW). There will be no effects to sites outside the project footprint. No built environment resources were noted, aside from oil well pads and related industrial features, which have been documented appropriately. Appropriate mitigation measures are detailed below to ensure that known resources are not adversely affected by the project, and to provide appropriate treatment in the event that a site is discovered during construction or related activities and cannot be avoided.

Cultural resources work was conducted in compliance with CEC "Instructions to the California Energy Commission Staff for the Review of and Information Requirements for an Application for Certification" (CEC, 1992) and "Rules of Practice and Procedure and Power Plant Site Certification Regulations (CEC, February 1997). Cultural resources fieldwork protocols were prepared in consultation with the CEC.

8.3.1 Affected Environment

8.3.1.1 Study Area

The South Star I and II plant sites and all linear project areas were subjected to a records search with a one-half-mile-wide study area (i.e., one-quarter-mile each side of the centerline for linear components, and a one-quarter-mile-wide buffer around the outer boundaries of each plant site). Data initially were collected for a 3/4-mile buffer in each direction from each facility, to ensure that all project components would be covered in the event that routing changed. The data on the 1/2-mile study area are reported here. This area is called "the study area' throughout this section.

Project Area. The term "Project Area" as used throughout this section is the area defined as follows: the Project Area for cultural resources includes the footprint of each plant site and all proposed linear components, plus a buffer zone of 200-feet to 225-feet radius on each side of each project component, except for the access road routes, for which the project area is 50' on either side of each roadway. The sizes of survey corridors or areas for each project component are detailed below.

While the term "Area of Potential Effects" (APE) often is used to describe this area, in fact the APE when defined will be much smaller than the survey area. The construction right of way corridor (ROW) for pipelines and the transmission line will be a maximum of 75 feet wide. For the improved access roads, which would simply upgrade existing roads for most of their lengths, construction ROW will extend no more than 25 feet from each side of the existing roadways, or a nominal 50' foot-wide-corridor. For each plant site, all laydown, parking, and construction components will be included within the 600-foot-square area to be fenced around each plant site. However, buffer zones for each facility were included in the archaeological survey to ensure that there was no potential for inadvertent effects to nearby resources. For the plant site, the buffer zone had a 200-foot radius. For the Proposed Natural Gas Pipeline for South Star I, for which a centerline had been identified, the survey corridor was 200-feet either side of the centerline. For proposed transmission lines, the existing line would be reconductored in the same location. If alternate transmission lines are constructed, they will parallel one side of the existing line. A corridor totaling 450-feet-wide was surveyed to provide for development on either side of the existing line. For the other linear facility routes, a buffer zone of 225-feet on each side of a nominal centerline was subjected to archaeological survey.

The entire Project Site/Plant Site area and the corridor of each proposed and alternate linear facility alignment was subjected to systematic pedestrian survey. Both plant sites and most of the linear corridors are in an active oil field which is heavily developed.

With one exception, no built environment features are present in the survey corridors, aside from modern oil exploration and development facilities (oil wells, steam plants, etc). All of the buildings are of modern vintage. While some of the well locations are older (as early as 1911), they present no features that would be amenable to architectural recordation. Older wells, thus, were not recorded as historic architectural features, but were recorded on primary records where appropriate. In accordance with BLM guidance (Duane Christian 1999), operating wells, and those with intact superstructure, were not recorded. A small abandoned and collapsed equipment shack was recorded near the margin of the 450-foot-wide transmission line corridor, outside the potential construction ROW. No

chronological data were available for this structure. It was recorded with a Primary Record. Project Components are listed in Table 8.3-1

8.3.1.2 Project Description

The project components are described in detail in AFC Section 2.0. The major components of the proposed South Star I and II Cogeneration Project are listed in Table 8.3-1 and delineated on Figure 8.3-1, which also illustrates survey coverage.

8.3.1.3 Natural Setting

The proposed South Star I and II Project area is located in and adjacent to the Midway Valley, which is a southeast-trending tributary of the San Joaquin Valley. The Midway Valley is located along the southwestern margin of the San Joaquin Valley, in the southeastern foothills of the Temblor Range, California. Regional geologic structure largely reflects the Cenozoic deformation related to activity along the San Andreas Fault Zone. The San Joaquin Valley has been a depositional basin since at least Miocene times. In the project area, stratigraphy includes recent alluvial channel deposits in ephemeral streams, older alluvial fan deposits of the Tulare Formation, and bedrock comprised of Belridge Diatomite of Upper Miocene age and the upper Miocene Santa Margarita Formation, both of which crop out in incised drainages in the vicinity.

The only significant modern surface water features in the vicinity of the plant sites are seasonal/ephemeral streams, such as those in Seventeen Mile Canyon and Hale-McLeod Canyon, which drain to Midway Valley. The perennial Kern River flows westward from the Sierra Nevada Range to Bakersfield and during high flow periods empties into the Buena Vista lake bed, approximately 20 miles east of the plant site. During the rare periods of rainfall, runoff takes the form of sheetwash or occasional “flash floods”, which rapidly erode the small stream channels. These stream beds typically are dry except during periods of heavy rainfall. Only during significant storms do these streams cross Midway Valley to drain into Buena Vista Creek. Historically, Buena Vista Lake was the only significant water source in the area. The lake, now almost dry as the result of agricultural draining, is 20 miles east of the project location.

The region is arid. Annual rainfall averages about 6 inches. The principal vegetation in the area is desert saltbrush (*Atriplex polycarpa*) and related chaparral species, along with a wide variety of non-native grasses. Trees are very rare, and almost exclusively are associated with historic settlement in the area.

8.3.1.4 Soils and Geology

Please refer to Section 8.15, Geological Resources for detailed descriptions of regional soil conditions and geology.

8.3.1.5 Disturbance within the Study Area

The primary sources of historic surface and subsurface disturbances in - and adjacent to - the project area are related to:

- Oil field development beginning as early as the 1880s, including numerous well pads, roads and pipelines
- Power lines, sub-stations and related construction
- Target shooting;
- Minor domestic occupation, now mostly abandoned.

8.3.1.6 Cultural Setting

Background data which are relevant to the South Star I and II Project sites are provided in a number of sources. Geographically, most pertinent to the immediate project area is the background provided in the technical report, "Cultural Resources Inventory for the Proposed Texaco Sunrise Cogeneration and Power Project" (King and Jackson 1998), prepared as a confidential appendix to an Application for Certification for the Sunrise Cogeneration Project. The summaries of historic context provided here for the South Star Project also draw on Gifford and Schenck (1926), Moratto (1984), Wallace (1978), Humusek-McGann and Maniery (1997), and Rintoul (1990).

Archaeological Context. Prehistorically, the central part of the Southern San Joaquin Valley was far better watered than at present. The remnants of Pleistocene lakes, Buena Vista and Tule, not only provided lacustrine resources, but there also were extensive marshes and sloughs, fed by a regularly flooding Kern River. The advent of flood control, irrigation, and major water diversions almost completely dried up most of these shallow

water sources. However, these water sources were a major focus of prehistoric and ethnographic settlement in the project area. The poorly watered Midway Valley and adjacent hills probably never saw substantial human use or settlement during prehistoric times.

Most subsurface archaeological investigations involving prehistoric materials in the project vicinity have been concentrated around Buena Vista Lake, about 20 miles distant from the project site. Well-documented excavations around the west side of Buena Vista Lake (Fredrickson 1977, Wedel 1941) have focused on large shellmounds situated along prehistoric lake shorelines. Post-molds and a wide range of artifacts at these sites are consistent with settlement of the area in large, permanent villages, ranging over a period of several thousand years. Published dates for these sites range from 4,000 to 1,000 B.P. (cf. King and Jackson 1998). Mortars, pestles, handstones, millingstones, and carbonized materials found in hearths document the importance of grains and seeds as a food source. Hunting and fishing as means of subsistence are represented by projectile points and net weights. Also found in these sites are flexed and extended burials, often accompanied by numerous olivella shell beads and other shell ornaments.

The recorded Yokuts villages (Heizer 1978) also tend to be concentrated around reliable water sources. The Yokuts certainly used Buena Vista Lake ethnographically. There has been virtually no subsurface archaeological investigation in the project area. However, based on documented archaeological and ethnographic pattern, evidence of substantial prehistoric settlement or use would probably not be expected in the immediate project area. Evidence of temporary campsites or similar ephemeral uses, such as transient hunting, seed collecting or processing, or trails, could be present.

Ethnography. The project area lies almost entirely within the ethnographic territory of the Southern Valley Yokuts (Figure 8.3-2). This territory roughly is bounded by the Tehachapi foothills to the south, the southern edge of Fresno to the north, the Tule River Reservation to the east and the crest of the Coast Range watershed to the west. Southern Valley Yokuts communities congregated around Tulare, Buena Vista, and Kern lakes and associated sloughs and creeks. These waterways were essential to the more than 15 identified tribelets in the Southern Valley Yokut communities, in an area where only minimal rainfall could be expected during the year. The Southern Valley Yokuts were well-adapted to the

environment of marshes, and wetlands, and used a wide variety of plant and animal resources through a range of subsistence strategies, including fishing, hunting, birding, and collecting grains, nuts, and seeds.

The Southern Valley Yokuts lived in permanent villages, both in single family dwellings and larger multiple-family dwellings. Over 40 named villages are recorded ethnographically. Homes were constructed from tule thatch laid over poles. Tules, obtained from the extensive marshes of the sloughs and lakes, also were used for boats, basketry and clothing.

The project area lies in the southwestern portion of Southern Yokuts territory, which was occupied ethnographically by the Tulamni tribelet. Tulamni territory extended to the western half of Buena Vista Lake, north to McKittrick, and south to the Tehachapi foothills.

The Coast Range watershed was inhabited ethnographically by the Inland Chumash. This group primarily used upland areas to the west and south of the project area, but may have extended inland as far as the crest of the Temblor Range, which lies a short distance east of the project's proposed transmission line.

The arrival of Spanish Colonial expeditions in 1770 disrupted the traditional way of living for the Yokuts. An epidemic in 1833 decimated the Yokuts population. The inrush of Euro-American population beginning with the Gold Rush of 1848, further disrupted ethnographic lifeways.

History. The establishment of the Buena Vista Petroleum Company's refinery north of McKittrick in the 1860s marked the beginning of petroleum extraction and production in Kern County (Hamusek-McGann et al. 1997). Although high transport costs made this enterprise uneconomical, small-scale oil exploration continued into the late 1800s. Beginning in the 1880s, natural asphalt deposits in the McKittrick area were mined commercially for paving and roofing material. The discovery of large oil deposits in the McKittrick, Midway, Sunset, Kern River and Elk Hills oil fields in the early 1900s ignited a boom in the petroleum extraction and production industry in the southwestern San Joaquin Valley. Further development in the area was spurred by the opening of rail lines into the

McKittrick and Midway Valleys in 1893 and 1900. Major discoveries in Fellows and Maricopa in 1909 and 1910 heralded the modern era of petroleum extraction (King and Jackson 1998). Today, the western Midway Valley remains in active production.

Intensive use of the area for petroleum exploration, extraction, and production for more than a century has resulted in an extensive distribution of industrial debris across much of the landscape. In addition to many active pumps and wells, historic capped wells, "Christmas trees," concrete and wooden well pads, pumps, earthen-bermed oil sumps, and industrial and occasional domestic historic trash scatters dot the landscape.

The most significant historic activity in the immediate project area clearly was the development and exploitation of the Midway-Sunset Oilfield. Discovered about 1900, the field achieved renown in 1909 when Midway 2-6, a well at Fellows, blew oil over the top of the drill rig at a rate of 2000 gallons per day. Even more remarkable was the Lakeview Gusher, located near Maricopa, 12 miles southeast, which the next year erupted in a gusher that created a huge lake of oil at its foot, and took 18 months to contain (Rinour 1990: 14-15).

The South Star study area lies in the Midway-Sunset oil fields. The proposed cogeneration plants and majority of the proposed linear facilities run through oil fields under active development and production. Portions of the proposed natural gas pipeline, transmission line and Alternate Route 2 gas and water line pass through areas that were exploited at one time but have since fallen out of production. Along some portions of the transmission line there is little evidence of either modern or historic oil development activity. These areas today show evidence of cattle grazing.

Historic occupation in the project vicinity focused almost entirely on oil exploration and production. The few small settlements that grew in the project area during historic times—Fellows, Midway Oil Camp, Associated Oil Camp—were company towns, built to house the oil workers and their families. Long term workers were needed to harvest the rich oil resources of the area, and these workers brought their families. The oil camps, even now marked by clusters of trees—elsewhere completely absent—included all the social amenities for the workers, including schools, stores, and recreational facilities. Fellows was

established as a town site in 1910 (Sweetner 1999). Outlying settlements like Fellows were small lease-holdings, known as lease houses, which also were occupied by oil workers and support staff. A photograph of the Midway-Sunset field taken during the 1920s (Rintoul 1990:18-19) shows what appear to be small houses, as well as industrial structures, scattered throughout the field. This suggests a dispersed pattern of residence, as well as residential clustering in the oil camps. Steam injection and other technological developments in the early 1960s increased the productivity of local fields. Oil production was increasingly industrialized. By this time, fewer workers were residing in the oil fields. In 1999, the Midway-Sunset Oil Field was the State's leading producer of oil. Many local workers reside in Bakersfield, and the only residences in active oil fields are those in the town of Fellows, which is still essentially an oil camp.

8.3.1.7 Native American Consultation

The Native American correspondences discussed below – including consultation letters, Native American mailing list, telecommunication notes, follow-up letters, and responses – are confidential. Copies are appended to the confidential Cultural Resources Technical Report, Appendix D.

On May 23, 2001, URS cultural resources staff received a response from the California Native American Heritage Commission (NAHC) with a list of local Native American groups and/or individuals with direct or indirect knowledge of cultural resources within or near the project area. Concurrent with the NAHC request, and prior to the beginning of fieldwork, a records search was conducted at the Southern San Joaquin Valley Information Center and Central Coast Information Center (SSJVIC and CCIC) of the California Historical Resources Information System (CHRIS). The NAHC consultation also sought to identify any sacred lands within the proposed project area (including a one-mile radius study area) that are identified in the Commission's Sacred Lands File. An initial search of the Sacred Lands File of the NAHC indicated that there were no recorded traditional cultural properties in the project vicinity.

Letters describing the project and a map of the proposed plant site and various components were sent by priority mail, with delivery confirmation, to six groups or individuals identified by the NAHC as appropriate contacts for the project area on June 6, 2001. The letters

inquired whether the groups/individuals had any concerns regarding the project, or wished to provide input regarding cultural resources in the project area.

One telephone response from a native American on the contact list had been received as of July 2, 2001. After discussing the proposed project and results of survey with the Project Archaeologist, the respondent had no further concerns. A record of this conversation is included in Appendix D. The Applicant is committed to forwarding to the CEC all copies of all Native American correspondence received after submission of the AFC.

8.3.1.8 Key Personnel Qualifications

The URS cultural resources personnel who conducted and/or supervised the field survey and prepared the Technical Reports and Application for Certification (AFC) Section 8.3 are:

- Sally Salzman Morgan, M.A., R.P.A. (Principal Investigator for the project)
- Brian Hatoff, M.A., R.P.A. (URS Archaeologist)
- Sean Dexter, B.A. (URS Archaeologist)
- Heather Dudock, B.A. (URS Archaeologist)
- Shannon Mahoney, B.A. (URS Archaeologist)

Ms Morgan and Mr. Hatoff meet the professional standards of the Secretary of the Interior for this work (Standards and Guidelines for Archaeology and Historic Preservation, National Park Service, 1983) and are professionally certified by the Register of Professional Archaeologists.

8.3.1.9 Cultural Resources Records Search

Records Search Methodology. A cultural resources records search was conducted to determine the extent of previously conducted cultural resource research as well as the number and location of any cultural resources within or adjacent to the project area. The records search was conducted at the Southern San Joaquin Valley Information Center in Bakersfield (for Kern County), and the Central Coast Information Center in Santa Barbara (for San Luis Obispo County). These are the relevant California Historical Resources Information System Information Centers for the project. A search for proposed facilities

within Kern County was performed on May 18, 2001. A search for a small part of the project area that extends into San Luis Obispo County was conducted on June 6, 2001. A search for the access road corridors subsequently added to the project was conducted at the SSJVIC on June 30, 2001. The searches covered an area extending for 3/4 mile on each side of each project component in order to ensure that appropriate data would be available if there were minor project changes. Data for a 1/4 miles radius are reported in the cultural resources appendix and summarized here.

Records Search Results

Previous Cultural Resource Surveys within Project Area or Adjacent Study Area. Previously conducted studies that pertain to the area within or adjacent to the project area are summarized in Table 8.3-2. Ten cultural resource studies on file with the SSJVIC and CCIC have been conducted within the project corridors and/or a study area of 1/4-mile-radius around each proposed project component. Previously recorded archaeological sites within the project area are outlined in Table 8.3-3 and previously recorded archaeological sites within an adjacent ¼-mile study area are found in Table 8.3-4.

Pedestrian archaeological surveys were conducted on all project components. Archaeological survey coverage and field conditions by project component are detailed in Table 8.3-6.

Previously Recorded Archaeological Sites within the Project Area. There are three previously recorded sites located within the Project Area (Table 8.3-3).

Previously Recorded Sites within Adjacent ¼-mile Study Area. Ten archaeological sites (historic trash scatters and isolates) have been documented within a 1/4-mile radius of project facilities (Table 8.3-4). Detailed descriptions and specific locations of these sites can be found in Appendix D, the confidential cultural resources technical report.

8.3.1.10 Field Research

Field Survey Methodology. The cultural resource survey for the proposed natural gas pipeline was conducted in May and June 2001, by a crew of seven archaeologists and archaeological field technicians directed by Sally Salzman Morgan, M.A. All personnel

meet the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. Ms. Morgan, Principal Investigator, is certified by the Register of Professional Archaeologists (RPA).

The field crew completed the survey by walking systematic transects through the study area. The survey corridor for linear facilities was 400-feet-wide (200 feet each side of centerline) for the South Star I Proposed Natural Gas Pipeline (for which a center line has been delineated); 50 feet each side of the existing roads for the proposed access roads; and 450-feet-wide (225 feet each side of an existing linear facility) for all other linear facilities, each of which approximately parallels existing facilities, but for which exact centerline placement has not been determined. For the proposed South Star I and II cogeneration plant sites, which will be located within a fenced area encompassing approximately 6.3 acres of a 1000-foot by 1000-foot parcel (about 23 acres each), the entire parcel plus a 200-foot-wide buffer on each side, was examined. Transects at no more than 15 meter intervals were employed on Bureau of Land Management lands. In accordance with the survey strategy previously employed in similar projects in the area, survey transects up to 25 meters wide were employed in heavily disturbed areas (i.e., areas undergoing active petroleum extraction).

Ground visibility in the survey areas was highly variable. In most areas, vegetation cover was sparse or intermittent, but there were patches of dense brush in some areas, particularly along the transmission line corridor. There were some hillsides along the proposed transmission route where ground visibility was poor to only moderate, due to heavy grass cover, and there is a moderate cover of brush in the areas west of Midoil Road (portions of the routes of the South Star I Proposed Natural Gas Pipeline and Alternate Natural Gas Pipeline). However, even areas of relatively dense vegetation were interspersed with areas of bare ground, rodent burrows, animal tracks, and road and erosion cuts, which afforded adequate ground visibility for survey. The crew made particular efforts to seek out and examine these clear patches of ground. There was very little exposed bedrock anywhere in the project area, except occasionally in road cuts and stream channels.

The archaeological survey revisited and "ground-truthed" several previously recorded sites within the survey corridor. Minor amendments were made to the records of

three previously recorded sites, to add GPS locational data or other additional information. No prehistoric resources were located as a result of the survey. However, 17 previously unrecorded historic sites and/or features were recorded. Many of these features were abandoned oil well pads or pads with some derelict equipment. Consistent with current BLM direction (Duane Christian, personal communication, 2000), these types of historical features were recorded using DPR 523A (Primary) forms. Most common were small scatters of brick and glass, generally found in association with apparently abandoned oil pipelines. These minimal resources also were recorded with Primary Records. More extensive features such as domestic trash scatters containing a variety of historical materials such as ceramics, glass, and other household trash, were recorded with full archaeological site forms as appropriate.

Newly recorded sites and features were assigned temporary numbers as discovered and recorded (i.e., South Star [SS]-1, SS-2, etc.). Addenda prepared for previously recorded sites also were identified with temporary SS numbers, but will be filed with the Information Centers under the permanent site numbers already assigned. When permanent site numbers are obtained from the Southern San Joaquin Valley Information Center for the newly recorded sites, a concordance list will be prepared for inclusion with this technical report and forwarded to report recipients.

Petroleum extraction in the study area over the last century has resulted in an almost ubiquitous litter of industrial debris, with little apparent patterning or integrity. In this context, it is essential to focus on loci that include materials of demonstrable antiquity (through the presence of, for example, solarized glass or hole-in-top cans). Some widely-distributed features were not recorded because of the lack of associations or evidence of antiquity or function. Features usually not recorded included the following:

- Pipelines and associated valves, boxes and gauges
- Graded, oiled and asphalted roads
- Berms, sumps, graded areas and bulldozer piles without associated materials
- Patches of oil sand without associated materials
- Wells currently or recently in production, without associated historic materials
- Abandoned oil wells without associated materials
- Storage tanks and machinery currently or recently in use

- Structures and industrial complexes currently in use
- Isolated fragments of glass, lumber, braided steel cable, brick, and other disassociated artifacts.

One exception to these recordation criteria was made for SS-4 (temporary number), an abandoned well with no associated equipment or historic materials. This site had been documented in field notes but not recorded in the field. A primary record was prepared for this feature to record its location and appearance after post-field research indicated its operating date as 1915.

Archaeological Survey Coverage. Figure 8.3-1 illustrates the project components and the areas surveyed for cultural resources, and Table 8.3-6 gives the specific coverage details and field conditions encountered at each project component. In May and June, 2001, field crews under the direction of Sally Salzman Morgan of URS Corporation conducted the field inventory for archaeological resources. Both project sites and proposed linear components were surveyed on foot. Survey transects were spaced at 10-meter to 25-meter intervals, and coverage was complete throughout all project areas. Seventeen historic trash scatters of variable size were recorded. Seven of these are within the footprint of linear components that were dropped from the South Star project subsequent to the survey, and will not be affected by the project. While the records for these sites will be filed with the SSJVIC and CCIC, these sites are not considered in assessing potential impacts of the current project, as they are outside the defined Project Area.

Summary of Survey Results. A total of four (4) previously recorded cultural resources, CA-KER-2361H, 2362H, 2363H and 2364H, were revisited during the survey because they lay in or very near the survey corridor. One of these sites, KER-2364H subsequently was determined to lie just outside the survey corridor. Minor amendments were made to records of three previously recorded sites in or near the survey corridor to expand site boundaries or clarify site locations. GPS equipment was used to redocument the locations of three previously recorded sites.

In addition to the previously recorded resources, the survey identified 17 unrecorded historical archaeological sites or features in or near the survey corridors. Minor corridor refinements subsequent to the survey (including deletion of one segment) excluded

seven of these sites from the project area. Although there is no potential for project affects to these sites, their records are included in the cultural resources technical report which forms a confidential appendix to this document. As indicated in Table 8.3-5, all of the recorded sites or features appear to be related to oil field development and petroleum extraction.

Note that no historic architectural features were recorded, however, two utilitarian built environment features, the remains of a small wooden shed and the remains of a small wooden bridge, were recorded in the same manner as other minimal industrial remains, such as concrete foundations and well pads. These features are described below.

No prehistoric archaeological resources were recorded.

Table 8.3-5 describes newly recorded cultural resource sites within the Project Area. Tables 8.3-3 tabulates previously recorded cultural resource sites within the adjacent ¼-mile study area. As noted above, the new site records will be filed with the SSJVIC. No new sites were recorded in San Luis Obispo County; however the survey report will be filed with the CCIC.

Survey Results by Project Component

South Star I Cogeneration Plant Site. The proposed South Star I Cogeneration Plant site is located in the southeast quarter of Section 17, T32S, R23E. The plant will be located within a 6.3 acre fenced area within a 23 acre parcel (1000-feet square), but only a portion of this area actually would be used for the plant. An electrical switchyard, access spur road, parking areas and laydown areas also would be included within this plant area. There are a number of existing roads and roadcuts on the site, but the site consists primarily of steep, open grassland. Substantial grading and filling would be required to create a level platform for use of this site.

The proposed site is located on a grassy hilltop near the western edge of this portion of the oil field. No exposed bedrock was noted; however, the very steep hill at the north side of the site drops precipitously into a deep drainage, with an exposed sandy bottom. A maze of road cuts crosses the top of the site, and several deep cuts run around the hillside, but there is little actual development on the site.

The site had not previously been included in any archaeological survey, nor were there any previously recorded cultural resources on the site. Results of the current survey were negative.

South Star I Proposed Electrical Transmission Line. South Star proposes to replace an existing 12.47 kV electrical transmission line with a 115 kV transmission line, from the Morgan Substation to the South Star I plant site. To the extent feasible, existing poles would be reused. The existing transmission line runs through the hills to the west of the principal area of oil field development for the most part. There is some evidence of older oil development in this area, including scattered oil well and pipelines, and a few abandoned facilities, but much of the area is grassland which has been subject to cattle grazing fairly recently. The existing line begins at the Morgan Substation, which is located immediately east of Mocal Road, at a point about 2.5 miles northwest of the town of Fellows. The line then parallels the southwest side of Mocal Road and runs southeast for a few hundred feet; then turns and continues due south up along a ridgeline and through rolling hills for about a mile. At this point the line turns southeast, and continues in this direction for about three miles to a hilltop near the western boundary of Section 17, in a western extension of the active TCI Oil field, above and to the west of the proposed South Star I plant site. The existing line would be replaced to this point, a distance of about 4.7 miles. From this point, a new 115 kV line would be constructed on a route extending east, then southeast to the South Star I plant site, a distance of about 0.6 miles.

A corridor 225 feet either side of the existing line was subjected to complete archaeological survey. Throughout much of this area, there is a moderate to thick cover of grass and intermittent brush. However, a large number of road cuts, graded areas, and animal trails provided some ground visibility. At least three previous surveys had crossed portions of this alignment. No resources previously had been recorded within the project area. Three cultural resources were recorded as the result of the current survey.

> **SS-04:** This isolate consists of the well pad of oil well “SFE-Co. 21-35 31/22" (Spud date- Dec. 3, 1915). There are no associated features or trash. The site lies near the centerline of the survey corridor for the proposed 115 kV transmission line, in the ROW for the existing transmission line. This feature is located on land owned by TCI.

SS-11: This isolate consists of a 36"-diameter metal wheel, and a minimal scatter of historic industrial debris, including burnt milled lumber and large metal bolts. A 12” x 12” x 74” wooden beam may have been a support for the wheel. This feature is located about 100 feet west of the centerline of the existing 115 kV transmission line, about 125 feet east of the western margin of the survey corridor, on land owned by TCI.

SS-12: The isolate consists of the remains of a small wooden shed constructed of milled lumber and wire nails. It may have had a corrugated sheet metal roof at one time. The structural remains are set into a hill slope adjacent to and 15 feet above a road cut and may be partially buried. As presently observable, the feature measures 90” x 52” in plan and is 40” high. The shed appears to be a utilitarian housing, possibly for some kind of industrial equipment. On one face is an opening 19” wide x 32” high, which faces northwest onto an existing road. Located 0.08 miles east of the feature (outside the survey corridor) is TCI well "Sec 1-32S-22E Well #5B" for which CDOG records give a spud date of July 8, 1911. This feature is located on the western margin of the Proposed Electrical Transmission Line survey corridor, on land owned by TCI. It would not be affected by replacement of the existing line in situ.

South Star I Alternate Electrical Transmission Line. An alternative to replacement of the existing line would be construction of a new 115 kV line in the same corridor, parallel with the existing 12.7 kV line. The new line would be placed to one side of the existing line.

The same resources described for the Proposed transmission line lie within the project area for the Alternate transmission line. The location of each resource relative to the proposed alignment cannot be determined precisely at this time, as it has not been determined which side of the corridor would be used for the proposed alignment.

South Star I Proposed Natural Gas Pipeline Route. The proposed route for the natural gas pipeline would extend from a tie-in to the existing Kern-Mojave Pipeline at Midway Road, about 2.5 miles east of the town of Fellows, southeastward about 2.5 miles to TCI’s Station 109, in the southwest quarter of Section 9, T32S, R23E. The proposed centerline of this proposed alignment was staked prior to the archaeological survey. Based on this centerline, a corridor 200-feet-wide on each side of the alignment was subjected to archaeological survey. Vegetation in this area included occasionally dense thickets of saltbrush and other arid chaparral species as well as low sparse grasses; however, ground

visibility generally was good. Soils are sandy, and low grade cherts are common on the surface.

This alignment, particularly in the area east of Highway 33, shows extensive evidence of former oil exploration and development, including remnants of pipes, valves and scattered industrial debris. However, there were few remarkable features or concentrations of chronologically meaningful material. There are few active oil wells in the vicinity.

Several previous surveys have crossed portions of this alignment. There are two previously recorded cultural resources (historic trash scatters) on the alignment. One additional cultural resource was recorded as the result of the current survey.

P-15-002361 (CA-KER-2361): This site is an extensive scatter of historic trash and oil industry-related debris. The site abuts the south side of the proposed centerline and extends about 120 feet south/southeast of the centerline of the Proposed Natural Gas Pipeline corridor. The existing site record was accurate and required no amendment. The land owner is TCI.

P-15-002363 (CA-KER-2363): This site consists of an extensive scatter of historic trash and oil-related debris, located on the southern side of a deep drainage; concrete abutments on either bank of the drainage that are presumed to have been supports for a bridge which has disappeared; and an oil well pad located to the north of the drainage. The well pad and bridge abutments lie within the current survey corridor, but the trash scatter does not. The original site record included all three features on the site sketch map, but the site's recorded location on information center maps did not include the features north of the drainage. The site record was amended during the current survey with record SS-2, which includes GPS location information and a date for the well pad, which is identified by a sign on the pad, “CCMOCO / 77-932”. California Division of Gas (CDOG) records establish the spud date for this well as Dec. 18, 1944. This feature is located on land owned by BLM Bakersfield. Most of the site lies south of the South Star I Proposed Natural Gas Pipeline corridor, but its northern features extend from the corridor's southwestern edge to within 150 feet of the centerline.

SS-01: The site consists of red brick scatter/piles, amethyst glass, a clear glass bottle stopper, other brown and aqua bottleglass fragments, an applied lip, molded bottle neck, a white ceramic mug with transfer pattern, and a pipeline valve. The site extends about 30 feet northwest from the centerline of the South Star I Proposed Natural Gas Pipeline corridor. This feature is located on land owned by TCI

South Star I Alternate Natural Gas Pipeline. An alternate route for the natural gas line begins at the Kern-Mojave Pipeline tie-in described above. The route then runs due south to intersect an existing surface wastewater line, which it follows southeast to the same end point as the proposed route at Station 109. Between Midway Road and State Route 33 the alternate route lies southeast of the proposed route. A short distance northeast of State Route 33, the alternate makes a turn to the west, crosses the proposed route, parallels the west side of the proposed route, then turns south to join the proposed route at TCI's Station 109 gas dehydration plant. From this point, the alternate route shares the same alignment as the proposed route to its terminus at the South Star I plant site. The survey corridor for this route extended 225-feet either side of the existing pipeline, to allow flexibility in siting the new line to either side of the existing line. Vegetation and cultural setting are the same as for the proposed route.

One previously recorded historic trash scatter lies on this corridor. Three additional resources were recorded as the result of the current survey.

P-15-002362 (CA-KER-2362): This scatter of brick, amethyst glass and oil-related debris was expanded northeastward by the results of the current survey. The site as amended lies across the center line of the survey corridor and extends about 100 feet to either side of the centerline. The original site record was amended with a supplemental record with the temporary designation SS-7. This scatter is located on land owned by TCI.

SS-05: This isolate is a historic trash scatter, measuring 46' x 56' that includes metal cable, metal pipeline, firebrick, red brick, and amethyst glass fragments. There is a concentration of red brick fragments on a flattened mound on the north edge of an adjacent dirt track, but no evidence of a foundation or structure. The red and yellow fired bricks are presumed to be related to the past oil processing in this area. The scatter extends northwestward about 75 feet from the southeastern margin of the survey corridor, to within about 150 feet of the centerline. This scatter is located on land owned by TCI.

SS-06: This isolate consists of several concentrations of red brick on the slope of drainage, and a sparse scatter of historic trash, in a 65' (E/W) by 45' (N/S) area. The scatter includes red brick, some yellow fire brick, clear and brown bottleglass, and window glass. The scatter lies about 50-feet west of the centerline of the survey corridor. This feature is located on land owned by TCI.

SS-8: This resource is a small wooden bridge across a minor drainage. The bridge is constructed from 12" x 12" beams. Plank and sheet metal retaining walls, held in place with upright pipes driven into the base of the drainage,

support the bridge cross-members. The road bed of the bridge is formed from 2" x 12" planks laid over the timbers cross-wise. The bridge itself measures 8-feet wide by 10-feet long, with a total length including supports of 28'. The bridge is strictly utilitarian and probably was constructed as a relatively temporary structure, as there is no associated road. There is no associated material which would provide chronology. However, there is oil sand in the small drainage that passes beneath the bridge, which suggests that this bridge was related to access for oil extraction. This feature, which lies about 100-feet south of the centerline of the survey corridor is located on land owned by TCI.

South Star I Proposed Natural Gas Pipeline, Segment A This gas pipeline segment would be an above-ground pipeline, mounted on existing piperacks in the existing TCI South Midway Utility Corridor. Segment A would extend southwest from Station 109 to a point a short distance northwest of the South Star I plant site, then would turn sharply southeast to enter the plant site. Use of this gas line route is dependent upon construction of the proposed or alternate route from the Kern-Mojave tie-in. The entire alignment runs through developed and active oil fields. There is some brush cover but generally excellent ground visibility, in undulating terrain with many gullies of various dimensions.

One historic trash scatter was recorded on the southeastern margin of this alignment.

SS-10: This site consists of a scatter of historic material that measures about 240' (N/S) by 160' (E/W). Historic materials observed include: red and fire brick, amethyst, green, clear and amber bottle glass fragments (much of it fused and melted), window pane glass, metal cable, nails, sheet metal, one sanitary-sealed can, ceramic and terracotta fragments, a white ceramic electrical insulator and patches of hardened oil or asphaltum. Glass fragments exposed in the road cut at the south end of the site indicate that the site includes some buried material or subsurface deposits at a depth of about 1 foot. The site lies on the southern margin of the survey corridor and extends to within about 120 feet of the centerline. This feature is located on land owned by TCI.

South Star I Improved Access Road. Access to the plant for construction and operation would be via a paved road extending southwest and then south from Midoil Road, the principal paved road that lies about ½ miles east of the plant site. An existing road shown on the Fellows 7.5 USGS quadrangle would be upgraded for the access route. At present, most of the route of this road exists as shown on the USGS. The existing road is about 16-

feet wide. It was a paved road at one time, but the paving has deteriorated. About 1000 feet east of the eastern border of the proposed plant site, oil well pads and other facilities were built sometime after the USGS map was made, and the road as shown has been completely disrupted. The disrupted segment would be reconstructed along the original route as shown on the USGS map. The existing route would be upgraded with minor widening and curve straightening as necessary and would be paved.

The road route as mapped on the USGS quadrangle was surveyed in transects paralleling the existing road and route. A corridor 15m (50') wide either side of the existing road was examined. This encompassed the potential construction ROW and a buffer of approximately 25 feet either side of the road. The entire route shows extensive disruption through development, including well pads, roads, graded areas, and fill. No cultural resources were identified as result of the survey.

South Star II Cogeneration Plant Site. The proposed South Star II Cogeneration Plant site is located in the center of Section 7, T. 32 S, R. 23 E. The size, conformation and use of the plant would be essentially similar to the South Star I Plant site. The proposed site is located on a hillside at the head of a small drainage, with extensive oil field development to the south and east and relatively undeveloped open grazing lands a short distance to the north. Some grading and filling would be required to create a level platform for use of this site.

A number of prior road cuts and terraces are present within the site. The drainage extending northward from the site has a meandering bottom, and has created a few natural exposures of sandy and shaly soils.

The site had not previously been included in any archaeological survey, nor were there any previously recorded cultural resources on the site. Results of the current survey were negative.

South Star II Proposed Electrical Transmission Line. It is proposed that a second 3.8 mile 115 kV circuit be added to the new transmission line from Morgan Substation that is proposed to service the South Star I plant. From the Morgan Substation, north of the town of Fellows, the existing transmission line extends south and southeast to a

point just northwest of the proposed South Star II plant. At this point the existing line forks, and one leg continues south while the other extends southeast to a transformer within the proposed South Star II plant site. The line from the Morgan Substation to the South Star II plant site would carry an additional circuit under this proposal.

The setting and resources on this alignment are identical with those described for the proposed South Star I transmission line.

South Star II Proposed Natural Gas Pipeline Segment B. A 1.4 mile natural gas pipeline would originate at the proposed South Star I pipeline Segment A, about 0.75 miles southwest of Station 109. From that point, Segment B would extend northwest about 1.4 miles to the South Star II plant site. The line would be above ground, and would use existing piperacks in the TCI South Midway Utility Corridor.

The setting and survey coverage are as described for the proposed South Star I gas line. The area has been very extensively developed. No cultural resources were recorded in the Segment B corridor.

South Star II Alternate Natural Gas Pipeline. This alternate route for natural gas would extend from a tie-in to the terminus of the existing TCI North Utility Corridor near Fellows, then approximately follow an existing road southeast, to the proposed South Star II Cogeneration Plant. The survey corridor for this line extended 225 feet to either side of the existing road, with potential siting of the line to either side of the existing road on an aboveground pipe rack. Some grading and filling would be required at a few locations to accommodate a new line. This area shows evidence of historic as well as modern oil development, in the form of scatters of industrial debris. Vegetation is a mix of non-native grasses and various arid chaparral species on rolling hills, dissected by deep and mostly very narrow drainages, as well as a few wider valleys.

Several previous surveys had crossed portions of this alignment, particularly near the eastern end. No resources previously had been recorded. Two cultural resources were recorded as the result of the current survey.

SS-19: The historic trash scatter covers an area of 45 meters x 80 meters. It consists of stoneware and white glazed transfer-pattern ceramic fragments; clear,

aqua, amethyst, cobalt blue and green bottle glass fragments, an AB machine bottle neck fragment; can fragments, car battery holder, corrugated tin roofing, 0.22 shell (fired), and round nails. The ceramics suggest domestic use of the area. This site extends from the proposed centerline to a point about 200 feet west of the centerline, spanning most of the western half of the survey corridor of South Star I Alternate Natural Gas Pipeline. The site is located on land owned by TCI.

SS-20: The feature consists of two upright metal pipes, one inside the other, suggestive of a capped oil well. Wooden planks surround the base of the pipes. Scattered around the pipes are other wooden boards and patches of oil sand. This feature is located near the western margin of the corridor, about 220 feet west of the centerline of South Star II Alternate Natural Gas Pipeline, on land owned by TCI.

South Star II Improved Access Road. Access to the plant for construction and operation will be via an existing paved road extending south-southwest from Midoil Road, a principal paved road that lies about ½ mile northeast of the plant site. The roadway which will be used is shown on the Fellows 7.5 USGS quadrangle. This road would be upgraded slightly, through minor widening and straightening at curves and repaving. The road at present is about 20-feet wide. The road route as mapped on the USGS map was surveyed in transects paralleling the existing road and route.

A corridor 15 meters (50-feet) wide either side of the existing road was examined. This encompasses the construction ROW and a buffer of approximately 25 feet either side of the road. The entire route shows extensive disruption through development, including well pads, roads, graded areas, and fill. No cultural resources were identified.

8.3.2 Environmental Consequences

Under CEQA, a project potentially would have significant impacts if it would cause substantial adverse change in the significance of a historic resource (i.e., a cultural resource eligible for the CRHR or an archaeological resource defined as a unique archaeological resource that does not meet CRHR criteria) or would disturb human remains. A non-unique and nonsignficant archaeological or paleontological resource need be given no further consideration, other than the simple recording of its existence by the lead agency.

Under the implementing regulations of Section 106 of the National Historic Preservation Act (36 CFR 800), impacts to identified cultural resources need be considered

only if the resource is a "Historic Property"; that is, only if it meets the criteria of eligibility for the National Register of Historic Places (36 CFR 60.4).

In some cases, determination of a resource's eligibility for the NRHP or CRHR (or its uniqueness) can be made only through extensive research, archaeological testing, and other costly and time-consuming methods. Where possible, to the maximum extent possible, cultural resources will be avoided. If upon agency review of this document there are resources that remain unevaluated and they cannot be avoided, formal eligibility evaluation will be undertaken. If a resource meets the criteria of eligibility for the NRHP, CRHR or is a unique archaeological resource, it will be formally addressed under Section 106 procedures, as set forth under 36 CFR 800 and/or Section 21084.1 of California PRC and Sections 15064.5 and 15126.4 of the CEQA Guidelines

8.3.2.1 Evaluation of Significance

State Level Mandates. Cultural resources include archaeological and historical objects, sites and districts, historic buildings and structures, cultural landscapes, and sites and resources of concern to local Native American and other ethnic groups. All cultural resources work conducted for the South Star is consistent with compliance procedures set forth in the California Environmental Quality Act (CEQA), Sections 15064.5 and 15126.4, and, in the case of federal involvement, Section 106 of the National Historic Preservation Act (NHPA), set forth at 36 Code of Federal Regulations (CFR) 800.

In considering impact significance under CEQA or NHPA, the significance of the resource itself must first be determined. At the state level, consideration of significance as an "…important archaeological resource" is measured by cultural resource provisions considered under CEQA Sections 15064.5 and 15126.4, and the draft criteria regarding resource eligibility to the California Register of Historic Resources (CRHR).

Generally, under CEQA a historical resource (these include built-environment historic and prehistoric archaeological resources) is considered significant if it meets the criteria for listing on the CRHR. These criteria are set forth in Section 15064.5, and are defined as any resource that:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Section 15064.5 of CEQA also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC 5097.98.

Impacts to "unique archaeological resources" and "unique paleontological resources" are also considered under CEQA, as described under PRC 21083.2. A unique archaeological resource implies an archaeological artifact, object, or site about which it can be clearly demonstrated that—without merely adding to the current body of knowledge—there is a high probability that it meets one of the following criteria:

1. The archaeological artifact, object, or site contains information needed to answer important scientific questions and there is a demonstrable public interest in that information; or
2. The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
3. The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource indicates an archaeological artifact, object, or site that does not meet the above criteria. Impacts to non-unique archaeological resources and resources which do not qualify for listing on the CRHR receive no further consideration under CEQA.

Under CEQA Section 15064.5, a project potentially would have significant impacts if it would cause substantial adverse change in the significance of:

1. An historical resource (i.e. a cultural resource eligible to the CRHR), or

2. An archaeological resource (defined as a unique archaeological resource which does not meet CRHR criteria),
3. A unique paleontological resource or unique geologic feature (i.e. would directly or indirectly destroy a site)
4. Human remains (i.e. would disturb or destroy burials).

A non-unique archaeological or paleontological resource is given no further consideration, other than the simple recording of its existence by the lead agency.

Criteria for eligibility for the CRHR are very similar to those that qualify a property for the NRHP, which is the significance assessment tool used under the NHPA. The criteria of the NRHP apply when a project has federal involvement. Note that a property that is eligible for the NRHP is also eligible to the CRHR. On projects with federal involvement, impacts to significant resources are assessed and addressed under the procedures of Section 106 of the NHPA, set forth at 36 CFR 800. At present, this project has no federal involvement.

All resources encountered during the mitigation and monitoring phases of the South Star, with the exception of isolate artifacts and isolate features that appear to lack integrity or data potential, will be evaluated for significance vis-à-vis CRHR and CEQA criteria described above. If a resource is found to be significant, then it will be subject to avoidance through alterations in project design when feasible. In the event that avoidance of cultural resources is not possible via project design modifications, appropriate mitigation data recovery, in accordance with this report and the CEC, will be conducted.

Federal Level Mandates. The legal frameworks for addressing cultural resources at the federal and state level are generally equivalent. The four criteria for evaluation established by the NRHP, listed below, are identified at 36 CFR 60.4 and are in accordance with the regulations outlined in 36 CFR 800 established by the Advisory Council on Historic Preservation (ACHP).

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that

possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

1. Resources that are associated with events that have made a significant contribution to the broad patterns of our history; or
2. Resources that are associated with the lives of persons significant in our past; or
3. Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
4. Resources that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

Hence, these evaluating criteria are used to help determine what properties should be considered for protection from destruction or impairment (36 CFR 60.2).

As previously noted, although the project is not considered a Federal undertaking at this time, the legal framework for addressing cultural resources at the Federal and State level are generally equivalent. Federal involvement would require compliance with Section 106 of the NHPA.

As noted above, impacts to identified cultural resources must be considered if the resource is an “important” or “unique archaeological resources,” under the provisions of CEQA Sections 15064.5 and 15126.4 and the eligibility criteria, or a “historic property” as defined in the NHPA and its implementing regulations. In many cases, determination of a resource’s eligibility can be made only through extensive research and archaeological testing. Because this may be costly and time-consuming, it is recommended that whenever possible, most cultural resources should be avoided to the maximum extent feasible. For a few resources, in particular, mundane isolate historic features without associated deposits or scatters of artifacts, the data potential for the resource may be captured completely by the recording of the resource. Thus the site, once recorded, may have little additional potential to yield data important to history. Except in extraordinary cases, such isolate features do not meet the criteria of eligibility to the CRHR or NRHP. Impacts to resources that do not meet these criteria need not be considered further in the environmental assessment process.

Nonetheless, where feasible, impacts even to insignificant resources are avoided through project design.

8.3.2.2 Direct Impacts

Direct impacts typically are associated with construction activity and have the potential to immediately alter, diminish or destroy all - or part of - the character and quality of historic and archaeological resources. The construction, operation and maintenance activities of South Star I and II are not expected to result in significant new direct impacts to any known cultural resource because it is anticipated that any known significant or potentially significant resources can be avoided. Undiscovered cultural resources could be affected by construction-related activities. Provisions for such an occurrence are provided in Section 8.3.3.1.

South Star I Cogeneration Plant. No cultural resources were recorded at the plant site or buffer zone either previously or during the current survey. No cultural resources impacts are anticipated.

South Star I Proposed Electrical Transmission Line. Three newly recorded resources, SS-4, SS-11 and SS-12, lie within the 450-foot-wide corridor surveyed for the proposed removal and replacement of the line. The corridor centerline for purposes of the survey was the existing transmission line. The 75-foot-wide construction ROW for removal and replacement of the existing transmission line will extend a maximum of 37.5 feet either side of the existing line. Removal and replacement would be conducted from existing roadways and would not require new construction or grading.

> **SS-4** is an isolate concrete oil well pad with a well sign. The date of the well was established as 1915, through research at CDOG. No historic trash or other material likely to provide additional information was present. For this reason, the information potential of the well appears to have been captured through its recordation and related research. The resource does not appear to be eligible to the NRHP or CRHR. It is unlikely that the pad would be affected in any way by replacement of the existing line, as it lies at least 75' from the nearest pole. However, since it does not qualify as a historic resource or a historic property, impacts to this site do not need to be considered further.
>
> **SS-11** is located at least 60 feet from the proposed construction ROW and would not be affected by work in the ROW.

SS-12 lies at least 185 feet from the construction ROW and would not be affected by work within the ROW.

South Star I Alternate Electrical Transmission Line. The alternate electrical transmission line would be constructed parallel with the existing 12.47 kV line. Exact placement of the new line has not yet been determined, but it would be constructed within the 450-foot-wide corridor already subjected to archaeological survey. The resources in this corridor are the same as those described for the proposed electrical transmission line described above (5.7.2.1.1).

SS-4 lies under the existing line and would not be affected by new construction in the corridor to either side of the existing line, as it would not be within the construction ROW. In any case, this resource does not appear to be eligible for either the CRHR or NRHP.

SS-11 lies about 100 feet west of the existing line. The feature, which represents the highly deteriorated remains of a piece of machinery, most likely related to oil exploration and production, with no associated artifacts or deposits. The resource probably has little additional data potential. However, impacts to this isolate feature potentially could result if the new line were located in the corridor west of the existing line.

SS-12 lies at the southwestern margin of the survey corridor, 220 feet west of the existing line. This feature consists of the highly deteriorated remains of a small wooden shed, possibly used as equipment housing. Impacts to this feature could result if the alternate line were constructed in the southwestern third of the western half of the survey corridor.

South Star I Proposed Natural Gas Pipeline. The survey along this corridor resulted in the recording of one previously unrecorded historic trash scatter (SS-1), and the re-recording of two previously recorded trash scatters, CA-KER-2361 and KER-2363. Two additional previously recorded resources in relatively close proximity to the project, CA-KER 2364 and CA-KER-2365, were determined to lie outside the pipeline corridor. Three additional sites were at least 500 feet distant from the survey corridor.

KER-2361, a historic trash scatter, abuts the southeast side of the proposed centerline and extends about 120 feet south. Impacts to the site could result from excavation or grading associated with pipeline construction on the proposed centerline.

KER-2363 at nearest is about 100 feet southeast of the proposed centerline and, as such, lies outside the proposed construction ROW. Impacts to this site are not anticipated.

SS-1, a small historic trash scatter, lies on the proposed centerline and extends about 30-feet west. Construction on this route could result in impacts to the site.

South Star I Alternate Natural Gas Pipeline. The survey along this corridor resulted in the recording of three previously unrecorded historic resources (SS-5, SS-6 and SS-8) as well as the re-recording of one previously recorded site CA-KER-2362. Four additional previously recorded resources were determined to lie at least 500 feet distant from the pipeline corridor. The centerline for the 450-foot-wide archaeological survey corridor was an existing surface pipeline. The alternate pipeline would be placed to one side (as yet undetermined) of the existing line. The construction ROW for the buried pipeline would be 75-feet-wide.

SS-5: This historic trash scatter lies 150 feet east of the corridor centerline. Impacts to the site could occur as the result of excavation or grading of the deposit, if the alternate pipeline route uses the easternmost 150 feet of the surveyed corridor.

SS-6: This historic trash scatter lies 50 feet west of the corridor centerline. Impacts to the site could occur as the result of excavation or grading of the deposit, if the alternate pipeline route uses the easternmost 150 feet of the surveyed corridor.

SS-8: This isolate feature consists of the remains of a small wooden bridge across a small drainage. The feature lies 100 feet south of the corridor centerline and could be affected by grading or excavation if the pipeline is placed in the east half of the survey corridor.

KER-2362: This historic trash scatter lies across the centerline of the alternate route, and extends 100 feet to each side of the centerline. Impacts to the site could result from construction in the central one-third of the survey corridor.

South Star I Natural Gas Line Segment A. The survey along this corridor resulted in the recording of one previously unrecorded historic trash scatter (SS-10). The proposed facility in this segment would be above-ground pipeline, to be installed on an existing TCI piperack. The construction ROW for the installation of the pipeline would be 75-feet-wide.

SS-10: This historic trash scatter lies on the southeastern margin of the survey corridor, about 120' from the proposed centerline. SS-10 would be outside the construction ROW for construction on the alignment centerline and will not be affected by construction.

South Star I Proposed Access Road. No cultural resources were recorded within the construction ROW for the access road, which would extend 50-feet to either side of the existing roadway. No cultural resources impacts are anticipated from improvement of this access route.

South Star II Cogeneration Plant. No cultural resources were recorded at the plant site or buffer zone either previously or during the current survey. No cultural resources impacts are anticipated from construction of the cogeneration plant.

South Star II Proposed Electrical Transmission Line. Three newly recorded resources, SS-4, SS-11 and SS-12, lie within the 450-foot-wide corridor surveyed for the proposed removal and replacement of the line, as described for South Star II under 8.3.2.2.2, above. The corridor centerline for purposes of the survey was the existing transmission line. The 75-foot-wide construction ROW for removal and replacement of the existing transmission line will extend a maximum of 37.5 feet either side of the existing line. Removal and replacement would be conducted from existing roadways and would not require new construction or grading.

SS-4, an isolate oil well pad, would not be affected in any way by replacement of the existing line, as it lies at least 75' from the nearest pole. Since it does not qualify as a historic resource or a historic property, potential impacts to this project do not need to be considered further.

SS-11 and SS-12 both lie to the west or southwest of the existing line, outside the 75-foot-wide construction ROW, and would not be affected by work within the ROW.

South Star II Proposed Natural Gas Pipeline Segment B. No cultural resources were recorded within the 450-foot-wide survey corridor for this segment, which would be an above-ground pipeline, installed on a piperack in an existing TCI utility corridor. No potential for cultural resources impacts has been identified.

South Star II Alternate Natural Gas Line. The survey along this 450-foot-wide survey corridor resulted in the recording of two previously unrecorded historic resources (SS-19 and SS-20). One additional previously recorded resource and two newly recorded resources (recorded in conjunction with survey of a line segment subsequently dropped) were determined to lie at least 500 feet distant from the pipeline corridor. Pipeline in this corridor would be placed on an above-ground piperack, with a construction ROW 75-feet-wide.

> **SS-19:** This historic trash scatter lies across the west half survey corridor, and extends about 200 feet northwest from the centerline. Impacts could result from grading or excavation for piperack supports in the west half of the survey corridor.
>
> **SS-20**: This feature consists of an isolate historic oil well pad with no associated artifacts or debris, located 220 feet west of the proposed centerline, at the western margin of the survey corridor. The feature's data potential appears to have been captured by its recordation; thus the features does not appear eligible to either the CRHR or the NRHP. Potential impacts to the feature need not be considered further.

South Star II Improved Access Road. No cultural resources were identified on the existing road or within a corridor 50 feet to either side. The construction ROW corridor would be centered on the existing road and would be 50-feet-wide. No potential impacts are identified.

8.3.2.3 Indirect and Cumulative Impacts

Indirect Impacts. Indirect impacts as defined in the Caltrans Guidance for Consultants (Caltrans 1991, 5-5, 6) "…are related to the primary consequences of the completed project and may be several steps removed from the project in the chain of cause and effect. Indirect impacts can normally be expected to cause change in the character or use of built environment by the introduction of undesirable auditory or visual intrusions. Noise and vibration activity itself may be considered indirect effects…". It is important to note that the Caltrans guidance defines certain categories of projects that have *virtually no potential for affecting historic resources*, which they define as projects with a "minimal APE". These undertakings typically include "…repair, maintenance, or minor alteration of existing streets, sidewalks, gutters … and similar facilities (Caltrans 1991: 5-2,3). The construction, operation and maintenance of the South Star I and II Cogeneration Project is not expected to result in

significant new indirect impacts to the built environment cultural resource base. No project components are adjacent to potentially significant built environment resources, so no indirect effects to historic resources in this category would be anticipated.

A project, further , may have potential indirect effects under CEQA when the implementation of the project will cause other predictable physical changes in the environment that are not directly associated with the project itself. In the case of the South Star I and II Project, cogenerated steam is to be used by TCI, a third party in adjacent oilfield operations for the thermal recovery of crude oil. The production of crude oil by TCI can result in environmental effects. Thus, the South Star Project might therefore be considered to have the potential to contribute indirectly to the effects of TCI's operations on cultural resources that may be present in the operating area.

TCI currently operates approximately 1,100 wells in the South Midway-Sunset Oilfield. TCI's future oilfield development plans will require a peak steam demand of 100,000 barrels per day (bbl/day). South Star I and II combined will cogenerate a total of 80,000 bbl/day of steam or 80% of the fieldwide steam demand. Therefore, South Star is expected to serve 880 existing wells.[1] Using TCI's estimated average steam demand of 60 barrel/well/day, South Star will also cogenerate enough steam to supply 453 new wells.[2]

It is the understanding of the South Star Cogeneration Company that TCI is currently completing construction of the South Midway Utility Corridor to consolidate the distribution of steam, oil, fresh water, wastewater and natural gas within the oilfield. Since the utility corridor is being built by TCI independent of the South Star Project, the utility corridor construction and operation are not considered indirect effects of the proposed South Star Project.

Cumulative Impacts. Section 2.5 describes past, present and reasonably foreseeable projects that could affect the same resources as South Star. The reader is referred to that section for details regarding each of these projects.

[1] South Star represents 80% of the fieldwide peak steam demand. Sixty percent of the 1,100 existing wells equals 880 existing wells served by South Star.
[2] South Star will produce 80,000 bbl/day. Using 60 bbl/well/day, this is enough steam to serve a total of 1,333 existing and new wells. 1,333 minus 880 existing equals 453 new wells served by South Star.

Cumulative impacts from South Star on the regional cultural resource base are limited because implementation of the mitigation measures proposed below for cultural resources will reduce project-related impacts to a less than significant level. The archaeological resources identified for this project appear to derive their potential significance from their potential to yield information important in history. Should it subsequently be determined that some or all of the recorded sites are significant, data recovery at significant sites and/or site avoidance ensures that the information content of significant archaeological resource sites will be retained. This approach limits the contribution of cumulative impacts of South Star on the regional cultural resources base. No potentially significant built-environment resources have been identified that would be directly or indirectly affected by the proposed project and thus there would be no contribution of cumulative impacts from the South Star on the regional built environment cultural resources base.

8.3.3 Mitigation Measures

Mitigation under CEQA Sections 15064.5 and 15126.4 must address impacts *to the values* for which a cultural resource is considered important. To mitigate adequately, it must therefore be determined what elements make a site eligible for the CRHR and/or NRHP. As noted previously and detailed below, the first line of mitigation is complete avoidance of all cultural resources when feasible.

In order to ensure compliance with applicable LORS and/or to reduce potentially significant impacts to less than significant levels, proposed conditions of certification are contained in Appendix K.

The proposed conditions include a condition (CUL-15) to address the potential for indirect impacts associated with the 227 new potential wells that may be served by South Star I and II each. This condition was duplicated from the Sunrise Project (98-AFC-4). The Sunrise Project, although now licensed as a simple-cycle plant, was originally a cogeneration project with TCI as its thermal host. TCI would have used Sunrise steam in its thermally enhanced oil recovery (EOR) operations in the same manner as proposed by South Star I and II. The condition proposed by South Star was adopted by the Sunrise Siting Committee in its

presiding member's proposed decision in May, 2000. Since South Star and Sunrise would both serve TCI's new wells, the new proposed condition is directly applicable for the same rationale adopted by the Sunrise Siting Committee.

8.3.3.1 Specific Mitigation Measures

General mitigation measures have been described above. Specific actions recommended at each project facility are described below.

South Star I Cogeneration Plant. Although there were many ground exposures at the plant site, no resources were identified. Other than a standard emergency discovery clause, no mitigation appears to be warranted**.**

South Star I Proposed Electrical Transmission Line
SS-4: This isolate lies within the construction ROW, but does no appear to meet the criteria of eligibility for the CRHR and NRHP. No mitigation is needed.

South Star I Alternate Electrical Transmission Line
SS-11, SS-12: The transmission centerline alignment and/or pole placement will be refined as needed to ensure that no pole is placed within 25 feet of these recorded features. Prior to construction, each site within 25-feet of the construction ROW will be flagged as an exclusion area. If the construction ROW for the selected alignment extends to within 25 feet SS-11 or SS-12, an archaeological monitor will be present during initial construction activity in the area to alert construction crews to the resource in order to ensure that impacts will be avoided. The general provisions described above also will apply.

South Star I Proposed Natural Gas Pipeline
KER-2361H: In consultation with the CRS, the centerline of the proposed alignment will be moved 50 feet northwest in the vicinity of this trash scatter, to exclude the site from the construction ROW. The boundaries of the site and a 25-foot buffer will be flagged as an exclusion zone. An archaeological monitor will be present in the vicinity of the site during initial grading and excavation to ensure that construction activity does not affect the site.

SS-1: The centerline of the proposed alignment will be moved 50 feet northwest in the vicinity of this trash scatter, to exclude the site from the construction ROW. The boundaries of the site and a 25-foot buffer will be flagged as an exclusion zone. An archaeological monitor will be present in the vicinity of the site during initial grading and excavation to ensure that construction activity does not affect the site.

South Star Alternate Natural Gas Pipeline
KER-2362, SS-5, SS-6, SS-8: If this route is selected, the actual alignment will be designed to "thread" its way around these sites, thereby excluding the sites

from the construction ROW. The CRS will flag the boundaries of each site and a 25-foot buffer exclusion zones. For any of the sites that lies within 25 feet of the construction ROW of the selected centerline, an archaeological monitor will be present during initial grading and excavation in the vicinity of the site to ensure that construction activity does not affect the site.

South Star I Proposed Natural Gas Pipeline Segment A. No cultural resources are present in or near the construction ROW. No specific mitigation measures are needed.

South Star I Improved Access Road. No cultural resources were identified on this route. No specific mitigation measures are required.

South Star II Cogeneration Plant. Although there were many ground exposures at the plant site, no resources were identified. No specific mitigation measures are needed.

South Star II Proposed Electrical Transmission Line
SS-4: This isolate lies within the construction ROW, but does not appear to meet the criteria of eligibility for the CRHR and NRHP. No mitigation is needed.

South Star II Proposed Natural Gas Pipeline Segment B. Although there were many ground exposures along the alignment, no resources were identified along this alignment. No specific mitigation measures are needed.

South Star II Alternate Natural Gas Pipeline
SS-19: If this route is selected, the centerline of the alignment will be adjusted approximately 50 feet to the southeast in the vicinity of the site, to exclude the site from the construction ROW. The CRS will flag the site boundaries, including a 25-foot buffer exclusion zone. An archaeological monitor will be present during initial grading and excavation in the vicinity of the site to ensure that construction activity does not affect the site.

South Star II Improved Access Road. No cultural resources were identified along this alignment. No specific mitigation measures are needed.

8.3.3.2 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to cultural resources have been identified to date. Implementation of the specific conditions described above in Section 8.3.3 will effectively reduce potential significant adverse impacts to a less than significant level.

8.3.4 LORS Compliance: Applicable Laws, Ordinances, Regulations, and Standards

Please refer to Table 8.3-7 for applicable LORS.

8.3.4.1 Federal LORS

National Historic Preservation Act of 1966 (NHPA), as amended; 16 USC § 470 et. seq.; Section 106; 36 CFR 800. The code includes provisions for protection of significant archaeological and historical resources. Procedures for dealing with previously unsuspected cultural resources discovered during construction are identified in 36 CFR 800 (for implementing § 106 processes).

The administering agency for the above authority is the State Historic Preservation Officer (SHPO) and the federal lead agency. Because a portion of the project crosses Bureau of Land Management lands, BLM is the lead federal agency for this project.

National Environmental Policy Act of 1968 (NEPA), as amended; USC § 4321 4327; 40 CFR 1502.25. The Act requires analysis of potential environmental impacts to cultural resources. BLM is the lead federal agency for NEPA.

Federal Antiquities Act of 1906, 16 USC 432, 433. This Act serves as the basis for legislation regarding the preservation of cultural properties on federal lands, and provides for a permit process for scholarly use of properties, and misdemeanor-level penalties. The provisions of this act apply to BLM lands crossed by the project.

Executive Order 11593 directs federal agencies to inventory cultural properties under their jurisdiction, to nominate properties to the NRHP, and to use due caution until the inventory and nomination processes are completed. BLM addresses resources on their lands under this Executive Order.

Archeological and Historic Preservation Act of 1976, 16 USC 469. This Act provides for the preservation of historical and archaeological data that might otherwise be lost as the result of a federal construction project or a federally licensed or assisted project. BLM is responsible for compliance with AHPA for federal lands crossed by the project.

Archaeological Resources Protection Act of 1979, 42 USC 470aa *et seq*. This Act provides felony-level penalties for removal or damage to archaeological resources more than 100 years old. BLM is responsible for compliance with ARPA for federal lands crossed by the project.

American Indian Religious Freedom Act of 1979, 42 USC 1996. It is the policy of the United States to protect and preserve the American Indian's (and other indigenous groups) right to express and exercise their traditional religions, including access to religious sites. BLM is the lead federal agency for compliance with AIRFA by the project.

Native American Graves Protection and Repatriation Act of 1990, 25 USC 3001. This Act establishes the rights of Indian tribes and Native Hawaiians to claim ownership of certain cultural items held or controlled by federal agencies. NAGPRA applies for federal lands crossed by the project. BLM is the lead federal agency for NAGPRA compliance.

Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, September 29, 1983. These guidelines are non-regulatory standards for the gathering and treatment of data related to cultural resources.

The administering agency for the above authority is the Secretary of the Interior, with BLM as the lead Federal agency.

Prevention of Significant Deterioration Permit (PSD). Provided when issuance of the PSD Permit is a federal undertaking and requires compliance with Section 106 of the NHPA. BLM would be responsible as the lead Federal agency.

8.3.4.2 State LORS

California Environmental Quality Act (CEQA) Section 15064.5; California Public Resources Code § 5024, 5024.5, and 21083.2; Title 14, CCR § 15126. CEQA addresses the treatment of cultural resources that could be affected by the project, the evaluation of the importance of these resources, the assessment of project impacts to important resources, and the development of a plan to avoid or address adverse effects to these resources. Formal findings of importance (for state purposes, eligibility to the California Register of Historic Places) and project effects are made by the lead state regulatory agency or, for federal undertakings, in consultation between the federal lead agency, SHPO, and the Advisory Counsel on Historic Preservation.

The administering agency for the above authority is the CEC.

California Public Resources Code §§ 25523(A), 25527; 20 CCR §§ 1752, 1752.5, 2300 - 2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (i). The code sections provide for the inclusion of requirements in the CEC's decision on an AFC to assure protection of environmental quality; the AFC is required to include a detailed description and discussion of the environment of the project area and the CEC is required to give special consideration to the need for protection of unique historical, archaeological and cultural sites.

The administering agency for the above authority is the CEC.

California State Health and Safety Code § 7050.5. The code section provides for County Coroner identification of human remains and, if determined to be of Native American origin, coordination with the NAHC.

The administering agency for the above authority is the Los Angeles County Coroner (Medical Examiner).

California Public Resources Code § 5097.5. The code section makes it a misdemeanor to remove without authorization archaeological resources or paleontological remains on sites located on public lands (Stats. 1965, c. 1136, p. 2792).

The administering agency for the above authority is the Kern County Planning Department for Kern County, and the San Luis Obispo County Planning Department for that county in the unlikely event that a find is made in that county in the course of the project..

California State Public Resources Code § 5024.1. The code section provides for the establishment of the California Register of Historic Resources and procedures for nominating sites to the Register.

The administering agency for the above authority is the State Historical Resources Commission.

California Public Resources Code § 5097.94 and 5097.98. The code section provides for mediation of disputes related to recovery and treatment of Native American human remains and identification of Most Likely Descendants.

The administering agency for the above authority is the California Native American Heritage Commission (NAHC).

8.3.4.3 Local LORS

Kern County Planning Department. The Kern County Planning Department follows all provisions of CEQA regarding cultural resources, and encourages cultural heritage resources to be identified and protected.

The administering agency is Kern County.

San Luis Obispo County Planning Department. The San Luis Obispo County Planning Department follows all provisions of CEQA regarding cultural resources, and encourages cultural heritage resources to be identified and protected. Further, the county assesses the local qualifications of archaeologists making cultural resources assessments in the county, and regulates who may carry out this work.

The administering agency is San Luis Obispo County.

City of Taft. There is no specific city legislation regarding prehistoric or paleontological resources. The city of Taft general plan encourages the preservation of historic resources.

The administering agency is the City of Taft.

8.3.4.4 Industry Codes and Standards

No laws, ordinances, regulations, standards or codes are applicable.

8.3.4.5 Agencies and Agency Contacts

Agencies with jurisdiction to issue applicable permits and/or enforce LORS related to cultural resources are shown in Table 8.3-8.

8.3.5 Applicable Permits

Applicable Permits for cultural resources are listed in Table 8.3-9.

8.3.6 References Cited

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Table 8.3-1. Project Components

Component	Description
South Star I Cogeneration Plant	A 6.3-acre site which would encompass the cogeneration plant, an electrical switchyard, access spur road as needed, parking areas and laydown areas. Site is located on a grassy hilltop. Substantial cut and fill will be required. The cut and fill and construction laydown areas encompass approximately 16 acres.
Linear Components	
South Star I Proposed Electrical Transmission Line	4.7 miles of existing 12.47 kV above ground transmission line would be removed and replaced with a new 115 kV line on the same route; existing poles would be used where possible. This line begins at the Morgan Substation (immediately east of Mocal Road, 2.5 miles northwest of the town of Fellows), parallels Mocal Road SE for a few hundred feet, turns and continues due south for about a mile, then turns SE for about three miles to a hilltop above and to the west of the proposed South Star I plant site. From this point, a new 0.6 miles115 kV line would diverge to the east, NE, then SE, to the South Star I plant site. Construction ROW would be 75'.
South Star I Alternate Electrical Transmission Line	A new 115 kV above ground electrical transmission line would be constructed parallel with the existing 12.47 kV transmission line, on the route described above. Construction ROW would be 75'.
South Star I Proposed Natural Gas Pipeline Route	An underground gas pipeline extending about 2.3 miles, from a tie-in to the existing Kern-Mojave Pipeline at Midway Road, southwestward to TCI's Station 109. Construction ROW would be 75'.
South Star I Alternate Natural Gas Pipeline	An alternate 2.4 mile route for the underground gas pipeline route, from a tie-in at the Kern-Mojave Pipeline, due south then southwest to tie-in at TCI's Station 109. Construction ROW would be 75'.
South Star I Proposed Natural Gas Pipeline Segment A	New above ground pipeline on TCI South Midway Utility Corridor piperack, from tie in to Proposed or Alternate line at Station 109, 1 mile southwest and then 0.25 miles southeast to the South Star I plant site. Construction ROW would be 75'.
South Star I Improved Access Road	0.6 mile existing road from Midoil Road would be upgraded and paved. 1000' of roadway at end nearest plant would be reconstructed on original (USGS-mapped) route. Construction ROW would be 50'.

Table 8.3-1. (Continued)

Component	Description
South Star II Cogeneration Plant	Site essentially similar in size and layout to the South Star I Plant site. Extends along head of drainage and would require some cut and fill.
Linear Components	
South Star II Proposed Electrical Transmission Line	A second 115 kV circuit would be added to the proposed South Star I above ground transmission line described above. New circuit would extend 3.8 miles from the Morgan Substation. At this point, the existing transmission line forks, and a short spur line connects to the South Star II plant site. Construction ROW would be 75'.
South Star II Proposed Natural Gas Pipeline, Segment B	A 1.4 mile above ground natural gas pipeline would tie in to the proposed South Star I Natural Gas Pipeline Segment A, then extend northwest on an existing TCI South Midway Utility Corridor piperack to the proposed South Star II plant site. Construction ROW would be 75'.
South Star II Alternate Natural Gas Pipeline Route	A 1.5 mile above ground pipeline on the TCI South Midway Utility Corridor from a tie-in near the terminus of TCI Utility Corridor south to South Star II plant site. Construction ROW would be 75'.
South Star II Access Road	1 mile existing paved road from Midoil Road to South Star II plant site would be upgraded and repaved. Construction ROW would be 50'.

Table 8.3-2. Previous Cultural Resource Studies Within the Project Area or Adjacent Study Area

Reference/Survey Number	Reference Summary
Alcock and Parr (1997) [KE-2010]	Systematic archaeological inventory of a series of grid lines for a seismic survey project.
Biosystems (1989) [KE-172]	Cultural resources inventory of a proposed pipeline.
King and Jackson (1998) [KE 2393]	A cultural resources inventory for a power project including power plant and linear facilities.
McGuire (1990) [KE-641]	A cultural resources inventory and limited evaluation of a pipeline corridor in California and Arizona.
Schiffman, R. (1981) [KE-1268]	A cultural resources inventory for a proposed pipeline
Alcock and Parr (1998) [KE-3427]	A cultural resources inventory for a triangular piece of property on the San Luis Obispo county boundary
Peak and Associates (1987) [KE-1840]	A cultural resources assessment for a proposed pipeline
Jackson and Shapiro (1999) [KE-2391]	A cultural resources inventory for a power project.
Strahan (1981) [KE-1564]	A cultural resources inventory for an active oil and gas lease.

Table 8.3-3. Previously Recorded Archaeological Sites Within 400 to 450-Foot Wide Survey Corridor

Survey No.	Site No.	USGS 7.5' Quad/ Project Segment	Site Type	Primary Reference	Type of Investigation	Status
KE-172, 2010	P-15-002361 (CA-KER-2361H)	Fellows/South Star I Proposed Natural Gas Pipeline	Historic	Biosystems (1989); Alcock, G. and R.E. Parr (1997)	Survey	undetermined
KE-2010	P-15-002362 (CA-KER-2362H) (amended by SS-7)	Fellows/ South Star I Alternate Natural Gas Pipeline	Historic	Alcock, G. and R.E. Parr (1997)	Survey	undetermined
KE-2010	P-15-002363 (CA-KER-2363H) (amended by SS-2)	Fellows/ South Star I Proposed Natural Gas Pipeline	Historic	Alcock, G. and R.E. Parr (1997)	Survey	undetermined

Table 8.3-4. Previously Recorded Archaeological Sites Within Adjacent Study Areas (within ¼ mile of project facility)

Survey No.	Site No.	USGS 7.5' Quad/ Project Segment	Site Type	Primary Reference	Type of Investigation	Status
KE-641	P-15-002576 (CA-KER-2576H)	Taft/ South Star I Proposed Natural Gas Pipeline and Alternate Natural Gas Pipeline	Historic	McGuire, K. (1990)	Survey	undetermined
KE-2010	P-15-006276 (CA-KER-5193H)	Taft/ South Star I Proposed Natural Gas Pipeline	Historic	Alcock, G. and R. E. Parr (1997)	Survey	undetermined
KE-2010	P-15-002364 (CA-KER-2364H)	Fellows/ South Star I Proposed Natural Gas Pipeline and South Star I Alternate Natural Gas Pipeline	Historic	Alcock, G. and R.E. Parr (1997)	Survey	undetermined
KE-2010	P-15-002365 (CA-KER-2365H)	Fellows/ South Star I Proposed Natural Gas Pipeline	Historic	Alcock, G. and R.E. Parr (1997)	Survey	undetermined
KE-2010	P-15-002368 (CA-KER-2368H)	Fellows/ South Star I Proposed Natural Gas Pipeline	Historic	Alcock, G. and R.E. Parr (1997)	Survey	undetermined
KE-2010	P-15-000779 (CA-KER-779H)	Fellows/ South Star I Alternate Natural Gas Pipeline	Historic	Alcock, G. and R.E. Parr (1997)	Survey	undetermined
KE-2010	P-15-006270 (CA-KER-5187H)	Fellows/ South Star II Alternate Natural Gas Pipeline	Historic	Alcock, G. and R. E. Parr (1997)	Survey	undetermined
KE-2391, KE-1564	P-15-001981 (CA-KER-1981H)	Fellows/ South Star I and South Star II Proposed and Alternate Electrical Transmission Line	Historic	Jackson, T. and W. Shapiro (1999), Strahan, W. (1981)	Survey	undetermined
KE-2391, KE-1564	P-15-001982 (CA-KER-1982H)	Fellows/ South Star I and South Star II Proposed and Alternate Electrical Transmission Line	Historic	Jackson, T. and W. Shapiro (1999), Strahan, W. (1981)	Survey	undetermined
KE-2010?	P-15-001996 (CA-KER-1996H)	Fellows/ South Star II Improved Access Road	Historic	Alcock, G. and R.E. Parr (1997)	Survey	undetermined

Table 8.3-5. Newly Recorded Cultural Resources in Project Area

Resource #	Resource Type	In Project Corridor?	Relation to Nearest Project Facility	Significance of Resource*	Potential Project-related Impact
SS-1	Historic trash scatter	yes	Adjacent W side of centerline, SS I Proposed Natural Gas Pipeline	Undetermined	Potential
SS-2 (amends plotting of KER-2363H)	Oil well foundation and bridge abutment	yes	150' SE of centerline, South Star I Proposed Natural Gas Pipeline	Undetermined	Potential
SS-4	Isolate oil well pad	yes	On centerline, South Star I and South Star II Proposed Electrical T.L.	Does not appear eligible	None
SS-5	Historic trash scatter	yes	150' SE of centerline, South Star I Alternate Natural gas Pipeline	Undetermined	Potential
SS-6	Historic trash scatter	yes	50 feet W of centerline, South Star I Alternate Natural gas Pipeline	Undetermined	Potential
SS-7 (amends extent of KER-2362H)	Historic trash scatter	yes	On centerline and 100' each side, South Star Alternate Natural Gas Pipeline	Undetermined	Potential
SS-8	Remains of wooden bridge	yes	100' S of centerline, South Star I Alternate Natural Gas Pipeline	Undetermined	Potential
SS-10	Historic trash scatter	yes	120' SE of centerline, South Star I Proposed Natural Gas Pipeline Segment A	Undetermined	Potential
SS-11	Fragmentary remains of a piece of industrial equipment (metal wheel and lumber)	yes	75' W of centerline, South Star I and II Proposed Electrical Transmission Line; within corridor for South Star I and South Star II Alternate Electrical Transmission Line	Undetermined	Potential
SS-12	Remains of wooden shed	yes	225' W of centerline, South Star I and II Proposed Electrical Transmission Line; within corridor for South Star I and South Star II Alternate Electrical Transmission Line	Undetermined	Potential
SS-19	Historic trash scatter	yes	Centerline to 200' W, South Star II Alternate Natural Gas Pipeline	Undetermined	Potential
SS-20	Isolate oil well head	yes	220' W of centerline, South Star II Alternate Natural Gas Pipeline	Does not appear eligible	None

* For purposes of impact assessment, all resources except isolate oil well pads are assumed to be significant.

Table 8.3-6. Archaeological Survey Coverage and Field Conditions by Project Component

Project Component	Field Conditions	Comments
South Star I Cogeneration Plant	30% ground visibility; moderate grass cover, many road cuts, drainages, well pads	Complete intensive inventory, corners staked
South Star II Cogeneration Plant	30% ground visibility; moderate grass cover, many road cuts, drainages, well pads	Complete intensive inventory, corners staked
South Star I Proposed Natural Gas Pipeline	30-60% ground visibility; sparse grasses, occasionally dense brush; many drainages, old roads, other exposures	Complete intensive inventory on staked centerline
South Star I Alternate Natural Gas Pipeline	30-60% ground visibility; same terrain as Proposed route	Complete intensive inventory; most of route follows existing surface pipeline
South Star II Alternate Natural Gas Pipeline	30-50% ground visibility; moderate grass and brush cover, but many roads, drainages, trails	Complete intensive inventory; most of route follows existing road and pipeline; however, route was not well marked or mapped; initial segment dropped from project after survey
South Star I Proposed Natural Gas Pipeline Segment A	50-60% visibility; numerous roads, tracks, pads, graded area; occasional dense brush	Complete intensive inventory; portions follow existing road.
South Star II Proposed Natural Gas Pipeline Segment B	50-60% visibility; very active oil field with intensive ground disturbance	Complete, intensive inventory; route mapped by not staked
South Star I and South Star II Proposed and Alternate Electrical Transmission Lines	20% visibility; moderately dense grass and brush, relatively little ground disturbance or active development	Complete intensive inventory; most of route follows existing transmission line
South Star I Improved Access Road	75% visibility, some brush adjacent to road, near complete disturbance	Complete intensive inventory, route uses existing road
South Star II Improved Access Road	75% visibility, some brush adjacent to road, near complete disturbance	Complete intensive inventory, route used existing road and former road route

Table 8.3-7. South Star I and II Cogeneration Project - Summary of LORS and Compliance

Reference found in the LORS Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance	AFC Conformance Section
8.3.4-1	Federal	NHPA, as amended; 16 USC § 470 et. seq.; Section 106; 36 CFR § 60.4 and 800.	SHPO/Lead Federal Agency (BLM)	Formal findings by the lead Federal agency for cultural resources in consultation with the SHPO and the Advisory Council on Historic Preservation. Implement procedures for dealing with cultural resources discovered during construction.	8.3.1
8.3.4-1	Federal	NEPA; 42 USC §§ 4321 - 4327; 40 CFR § 1502.25.	Lead Federal Agency (BLM)	Analysis of potential environmental impacts on federal lands.	8.3.2
8.3.4-1	Federal	Federal Antiquities Act of 1906: 16 USC §§ 432, 433	Lead Federal Agency (BLM)	Basic legislation for preservation of cultural properties on Federal lands.	Not referenced in Section - but LORS are applicable. 8.3.2
8.3.4-1	Federal	Executive Order 11593	Lead Federal Agency (BLM)	Directs Federal agencies to inventory, nominate properties to the NRHP and protect cultural resources	Not referenced in Section - but LORS may be applicable. 8.3.2
8.3.4-1	Federal	Archaeological Resources Protection Act of 1979 (16 USC § 470a et. seq.). †	Secretary of the Interior and Lead Federal Agency	Provides for felony-level penalties for destruction, damage or removal of cultural resources on Federal lands.	Not referenced in Section - but LORS are applicable. 8.3.2
8.3.4-1	Federal	Native American Graves Protection and Repatriation Act of 1990 (25 USC § 3001).	Lead Federal Agency (BLM	Establishes mechanism for right of Indian tribes to claim ownership of human remains and certain cultural items.	Not referenced in Section - but LORS may be applicable. 8.3.1, 8.3.2

Table 8.3-7. (Continued)

Reference found in the LORS Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance	AFC Conformance Section
8.3.4.1	Federal	Archaeological and Historic Preservation Act of 1976 (16 USC § 469)	Secretary of the Interior and Lead Federal Agency	Provides for coordination with the Secretary when a Federally licensed undertaking may cause irreparable damage to significant cultural resources.	Not referenced in Section - but LORS may be applicable.8.3.1, 8.3.2
8.3.4.1	Federal	Secretary of the Interior's Standards and Guidelines, September 29, 1983. †	Secretary of the Interior and Lead Federal Agency	Establishes standards for the gathering and treatment of data related to cultural resources.	8.3.1
8.3.4.1	Federal	Prevention of Significant Deterioration (PSD) permit.	U.S. Fish and Wildlife Service (USFWS) (via U.S. EPA Region IX)	Provided when issuance of the PSD permit is a "federal undertaking" and requires compliance with section 106 of the NHPA. South Star emissions do not exceed PSD significant emissions threshold; therefore, PSD regulations do not apply.	Not applicable
8.3.4.2	State	California Environmental Quality Act (CEQA) Section 15064.5; California Public Resources Code §§ 5024, 5024.5, and 21083.2; Title 14, CCR § 15126.4.	CEC	Formal findings by the lead state agency regarding project-related effects to important cultural resources.	8.3.1, 8.3.2
8.3.4.2	State	Cal. Pub. Res. Code §§ 25523(A), 25527; 20 CCR §§ 1752, 1752.5, 2300 - 2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (i).	CEC	Special consideration of unique historical, archaeological and cultural sites.	Not referenced in Section - but LORS may be applicable. 8.3.1, 8.3.2

Table 8.3-7. (Continued)

Reference found in the LORS Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance	AFC Conformance Section
8.3.4.2	State	Cal. Health & Safety Code § 7050.5.	County Sheriff-Coroner (Medical Examiner) Mr. Larry D. Smith, M.D. (909) 443-2300	Determination of origin of human remains and coordination with NAHC.	Not referenced in Section - but LORS may be applicable. 8.3.1, 8.3.2
8.3.4.2	State	Cal. Pub. Res. Code § 5024.1	State Historical Resources Commission	Provides for the establishment of the California Register of Historic Resources and procedures for nominating sites to the Register.	Not referenced in Section - but LORS may be applicable. 8.3.2
8.3.4.2	State	Cal. Pub. Res. Code § 5097.94 and 5097.98.21	Native American Heritage Commission (NAHC) Rob Wood (916) 653-4040	Provides for mediation of disputes related to recovery and treatment of Native American human remains and identification of Most Likely Descendants.	Not referenced in Section - but LORS may be applicable. 8.3.1, 8.3.2
8.3.4.32	Local	Kern County General Plan Kern County 1982).	Kern County Ms. Cheryl Casdorph Sr. Planner 661.862.8624	Provides policies to protect and identify historical, archaeological, paleontological, and significant architectural resources.	8.3.2
8.3.4.32	Local	Taft General Plan	City of Taft Mr. Isaac George Principal Planner 661.763.1222 xt. 25	City conforms with CEQA	8.3.2

Table 8.3-7. (Continued)

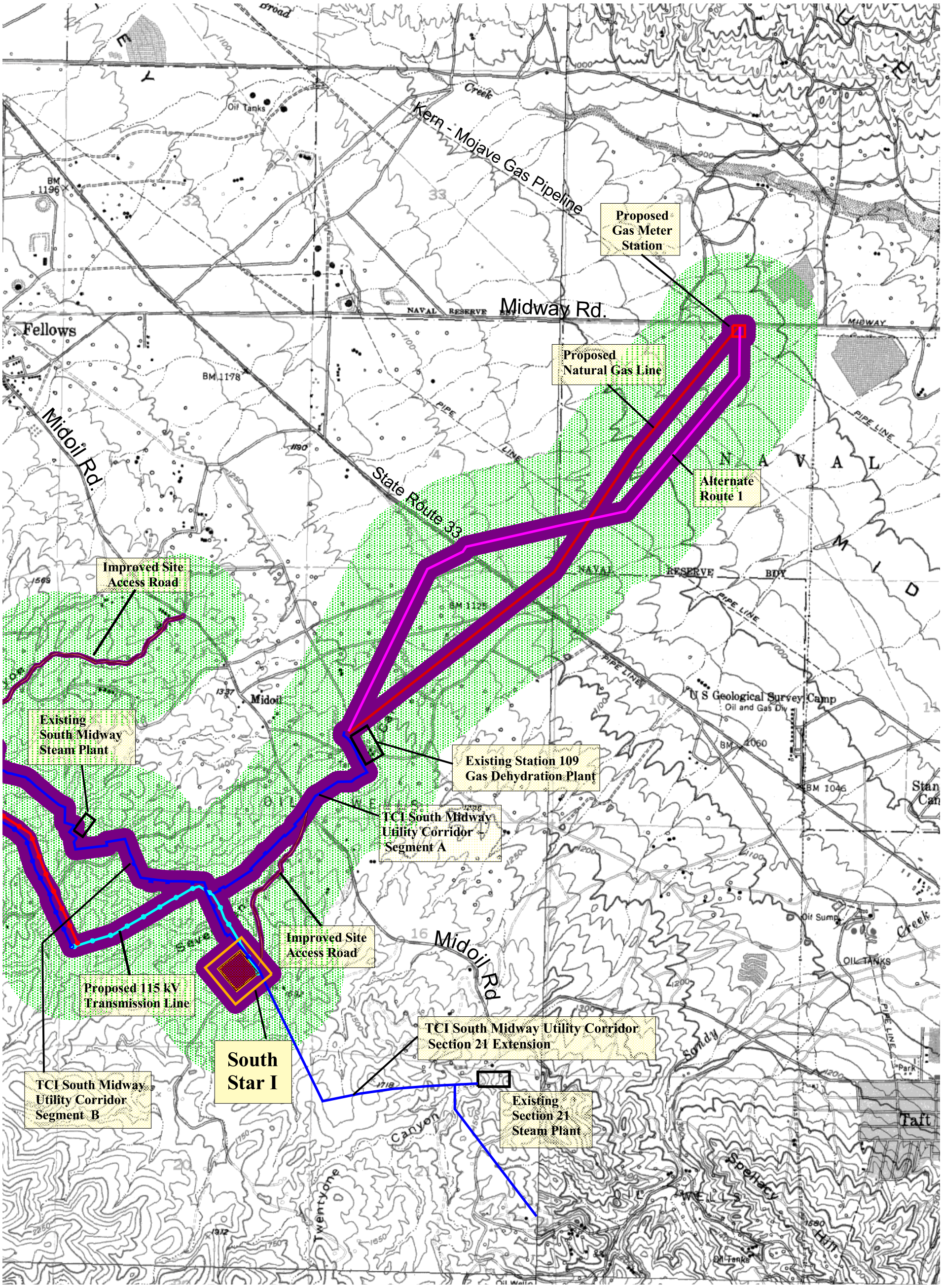
Reference found in the LORS Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance	AFC Conformance Section
8.3.4.32	Local	San Luis Obispo County General Plan (San Luis Obispo County 1984).	San Luis Obispo County Mr. Matt Janssen Sr. Planner 805.781.5104	Provides policies to protect and identify historical, archaeological, paleontological, and significant architectural resources.	8.3.2
8.3.4.42	Industry	None applicable.	--	--	NA

Table 8.3-8. Agency Contacts

AGENCY	CONTACT	TITLE	TELEPHONE
California Native American Heritage Commission	Mr. Rob Wood	Associate Government Program Analyst	(916) 653-4040
Kern County	Mr. Carl Sparks	Sheriff/Coroner	(661) 861-2606
Kern County Planning Department	Mr. Ted James	County Planner	(661) 862-8618
San Luis Obispo County Planning Department	Mr. Matt Janssen	County Planner	(805) 781-5104
San Luis Obispo County	Mr. Patrick Hedges	Sheriff-Coroner-Marshall	(805) 781-4513
City of Taft Planning and Building Department	Mr. Isaac George	Planner	(661) 763-1222 ext. 25
California Department of Parks & Recreation Office of Historic Preservation	Mr. Dwight Dutschke	Associate Government Program Analyst	(916) 653-6624

Table 8.3-9. Applicable Permits

Permit	Agency	Schedule
Federal	No permits have been identified	
State	No permits have been identified	
Local	No permits have been identified	



- Alternate Route 1 (Natural Gas)
- Existing 12.47 kV Transmission Line (to be reconductored for 115 kV)
- Proposed 115 kV Transmission Line
- Propsed Natural Gas Line (Approx. 10, 500 feet)
- TC1 South Midway Utility Corridor (Segments A, B, C Natural Gas, Steam, & Water Lines)
- Site Boundaries
- Miscellaneous Facility
- Area Subjected to Archaeological Survey
- 1/4 mile Study Area

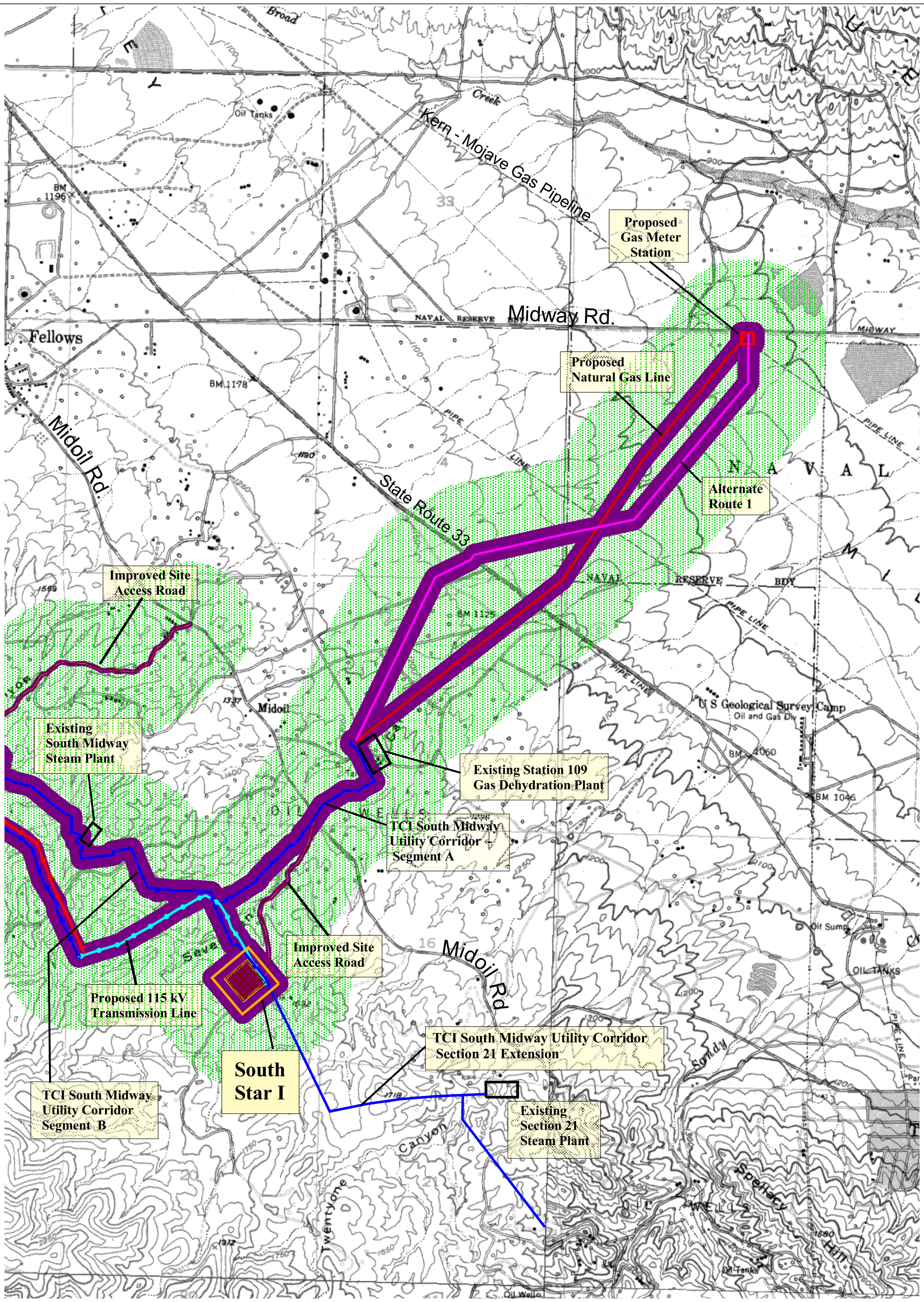
0.25 0 0.25 Miles

1:24000

N

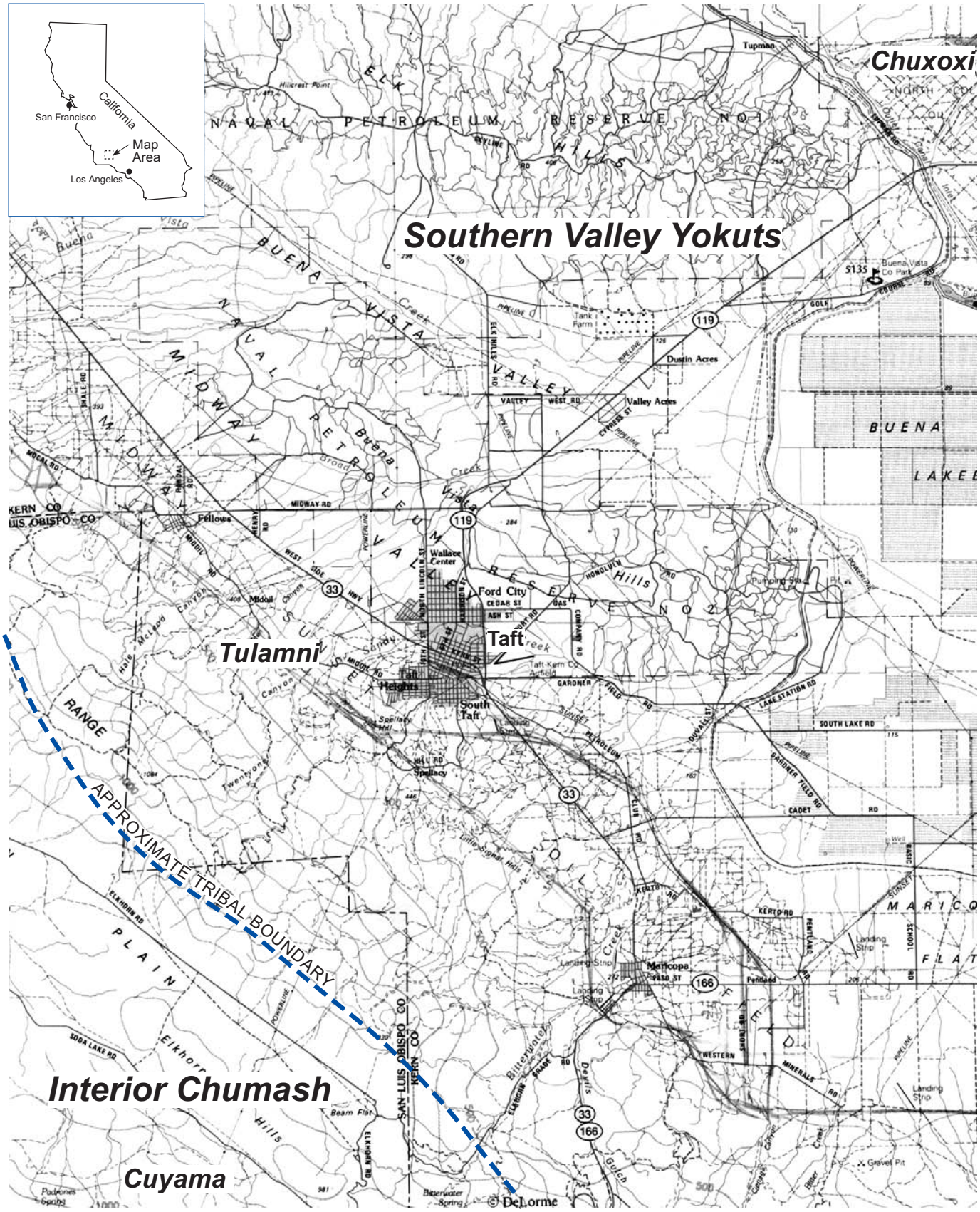
URS	South Star Cogeneration Project Project No. 51-00167034.00	Area Subjected to Archaeological Survey (Sheet 1 of 2)	Figure 8.3-1

L:\Projects\Southstar_AFC\Apr\archaeology.apr\East - AFC Archaeological Survey Map Layout



URS	South Star Cogeneration Project Project No. 51-00167034.00	Areas Subjected to Archaeological Survey (Sheet 2 of 2)	Figure 8.3-1

L:\Projects\Southstar_AFC\Apr\archaeology.apr\West - AFC Archaeological Survey Map Layout



Source: Adapted from Wallace and Grant (both in Heizer, 1978)

0 1 2 3 km
0 1 2 miles

URS	Project No. 51-00167034.00 South Star Cogeneration Project	APPROXIMATE AREAS OF ETHNOGRAPHIC OCCUPATION	Figure 8.3-2